

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application.

Claims 1 and 5-10 are now present in this application. Claim 1 is independent.

Claims 2-4 have been canceled and claims 1, 5, 6, 9 and 10 have been amended. Reconsideration of this application, as amended, is respectfully requested.

Priority Under 35 U.S.C. § 119

Applicants thank the Examiner for acknowledging Applicants' claim for foreign priority under 35 U.S.C. § 119, and receipt of the certified priority document.

Information Disclosure Citation

Applicants thank the Examiner for considering the references supplied with the Information Disclosure Statement filed January 27, 2005, and for providing Applicants with an initialed copy of the PTO-SB08 form filed therewith.

Rejection Under 35 U.S.C. § 112, 2nd Paragraph

Claims 1 and 5 stand rejected under 35 U.S.C. § 112, 2nd Paragraph. This rejection is respectfully traversed.

The Examiner has set forth certain instances wherein the claim language is not clearly understood. Specifically, the Examiner found the term "small" to be indefinite.

In order to overcome this rejection, Applicants have amended claims 1 and 5 to correct each of the deficiencies specifically pointed out by the Examiner. The term "small" in claim 1 is defined with reference to another element to give the relative meaning context and canceled from claim 5. Applicants respectfully submit that the claims, as amended, particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Rejections Under 35 U.S.C. § 102 and § 103

Claims 1-5 and 7-10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by US 4,222,750 (Gauthier et al.). Claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Gauthier et al. These rejections are respectfully traversed.

Complete discussions of the Examiner's rejections are set forth in the Office Action, and are not being repeated here.

While not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the instant application, Applicants respectfully submit that independent claim 1 has been amended to recite a combination of elements in a gas concentrator including a filter for filtering out impurities from the mixed gas, a plurality of adsorption beds containing the adsorbent for separating the specific gas from the mixed gas supplied via the filter and a backflow prevention means formed on channels through which the separated gas in the adsorption beds is discharged. A small diameter pipe interconnects the channels at production ends of the adsorption beds with each other to perform processes of cleaning and applying vacuum pressure to the adsorption beds, the small-diameter pipe having a diameter smaller than a diameter of the channels. A vacuum pumping means is connected to a channel for supplying the mixed gas to the adsorption beds, the vacuum pumping means generating the pressure difference caused from a difference between the a vacuum pressure and a pressure of the mixed gas.

A valve means comprises a channel base of a single body formed with channels respectively connected to the adsorption beds, a channel connected to a mixed gas supplying channel, and a channel connected to the vacuum pumping means, and solenoid drivers mounted in the channel base for switching the channels formed in the channel base in order to alternately apply the vacuum pressure and the pressure of the mixed gas to the adsorption beds. A gas supplying means supplies a target space with the gas which flow rate and concentration are controlled by controllably supplying the mixed gas supplied from the filter to the gas separated and produced in the adsorption beds.

The channel base of the valve means, which is formed in the single body formed with the channels, is formed with mounting portions for mounting the solenoid drivers, bed connecting portions to be connected to the adsorption beds, and a channel connecting portion to be connected to the mixed gas supplying channel. Each of the solenoid drivers of the valve means comprises a frame for supporting the whole of the solenoid driver, a coil housed in the frame for providing a motive force by a current supplied, a plunger for opening and closing the channel through its reciprocation by the motive force of the coil, guide pipe for guiding the plunger, and a pumping means connecting portion extended on the guide pipe. Each of the solenoid drivers are divided each other by a partition. The bed connecting portions are communicated with the channel connecting portion when the pumping means connecting portion is closed by the plunger of the solenoid drivers, and the bed connecting portions are communicated with the pumping means connecting portion when the pumping means connecting portion is opened by the plunger of the solenoid drivers.

Applicants respectfully submit that this combination of elements as set forth in independent claim 1 is not disclosed or made obvious by the prior art of record, including Gauthier et al.

As recited in amended claim 1, the channel base of the valve means, which is formed in the single body formed with the channels, is formed with mounting portions for mounting the solenoid drivers, bed connecting portions to be connected to the adsorption beds, and a channel connecting portion to be connected to the mixed gas supplying channel.

Each of the solenoid drivers of the valve means comprises a frame for supporting the whole of the solenoid driver, a coil housed in the frame for providing a motive force by a supplied current, a plunger for opening and closing the channel through its reciprocation by the motive force of the coil, guide pipe for guiding the plunger (17), and a pumping means connecting portion extended on the guide pipe. And, each of the solenoid drivers is divided from one other by a partition.

Further, the bed connecting portions are communicated with the channel connecting portion when the pumping means connecting portion is closed by the plunger of the solenoid drivers, and the bed connecting portions are communicated with the pumping means connecting

portion when the pumping means connecting portion is opened by the plunger of the solenoid drivers.

Applicants respectfully submit that the combination of elements as set forth in independent claim 1 is not disclosed or made obvious by the prior art of record, including Gauthier et al., for the reasons explained above. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

With regard to dependent claims 5-10, Applicants submit that claims 5-10 depend, either directly or indirectly, from independent claim 1 which is allowable for the reasons set forth above, and therefore claims 5-10 are allowable based on their dependence from claim 1. Reconsideration and allowance thereof are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

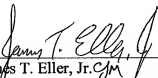
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Chris McDonald, Registration No. 41,533, at (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: February 2, 2009

Respectfully submitted,

By 
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